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FROM THE INSIDE

A cooperation of the doves

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"*Doctors are among the most altruistic of men.*"
Shurly & Bullock, JAMA, 1936 [1]

It was the third hour of our conference call. More than 20 researchers were contemplating a global response to the SARS-CoV-2 pandemic. I listened to the intense discussions, transfixed. The trial ideas were numerous, including drugs from a century past, re-purposed medications, and novel molecules. The tension was high, and the decisions unfolding had the potential to change the course of the pandemic. However, I could not escape the questions, "Will our group be the *first* to find an answer? Should we work *with* other groups? Will they work with us?" At the same time, for me, "Will I have authorship on the paper?" I realized that even while helping, I was competing. And frankly, I was ashamed.

I am a researcher. I am trained in clinical epidemiology and translational science, focusing on sepsis. I am also an intensivist and attend at the bedside of the critically ill. This training puts me in a unique position to help COVID-19 patients, many of whom I will never meet. However, on the day of this conference call, I could not untangle what drove my desire to help. Genuine altruism? Or maybe a desire to help *more* than others, even that others might *know* that I helped.

The COVID-19 pandemic has challenged many in the medical profession to leap beyond their usual practice to help others. The examples are endless, such as traveling volunteers to COVID hotspots, medical students providing childcare for physician parents, and clinicians risking their lives on the frontline. I consider these colleagues to be full of pure altruism and ideals. Altruism is the selfless concern for the well-being of others. It undoubtedly influenced my call to medicine, and it is at the core of the Hippocratic Oath. In addition, although once thought to be on the decline [2], medical altruism is never more common than during the COVID-19 pandemic.

However, altruism has many types, and on that call, mine felt different than in the past. "Pathologic" altruism is too much of a good thing, helping to the point of being excessive or causing harm [3]. This is when good intentions mislead us about what is truly helpful. "Reciprocal" altruism is when we help others expecting a return on the investment. It is a behavior in which helpers preferentially seek out other helpers [3]. These were not my issues.

However, another type of altruism is driven by ego. In this case, the behavior comes from a desire to protect, or even enhance, one's reputation. Consider donations to charity. Controlled experiments reveal our tendency to donate more when we have an audience [4]. We compete to gain status. Evolutionary biologists cynically term this "competitive altruism."

And that was it. Since the early days of medical training, I was expertly trained to compete. Whether as a student, clinician, educator, or researcher, we repeatedly have to prove our worth. The judges of this competition are funders, employers, patients, and even each other. Self-esteem can be linked to these wins, so that the more we compete, the more we *need* to compete. As Alfie Kohn writes in the opening of his first novel, "Life has become an endless succession of contests." [5], thus far, so has most of my career in medicine.

However, something about the COVID-19 pandemic brought my competition into sharp relief. I am certain that front-line clinicians caring for breathless COVID patients were not competing to "out help" each other. However, I was not certain about our community of academicians. I needed to manage my urge to compete and lean into the moral and societal responsibility to selflessly contribute. But would my colleagues do the same?

In *The Selfish Gene*, [6] the evolutionary biologist Richard Dawkins discusses a hypothetical population of doves

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and hawks proposed by Maynard Smith. In this simple model, doves threaten in a dignified manner by staring or posturing, and none are hurt. One dove will eventually tire out. Hawks, however, are unrestrained and will fight each other to the death. In group selection theory, a dove-only population will do quite nicely, but only if all cooperate and agree to be a dove ("the Conspiracy of the Doves"). The doves thrive in the long run, only threatened by treachery from within (a single hawk). Amidst the many hypothetical combinations of doves and hawks, conspiracies are an ideal but rarely achieved.

Now, more than ever, we need a Conspiracy (or Cooperation) of the Doves. It will take honest reflection about why we seek to help and an understanding of when we act like doves or hawks. This is especially true among contending scientists, who are often rivals for funding, reputation, and new knowledge. In a response to Dawkins, *The Unselfish Gene*, Benkler writes how cooperative systems can succeed in the face of conflicting incentives [7]. He promotes strategies such as open communication, authenticity, fairness, consideration of intrinsic motivations, empathy, and encouragement of diversity. These individual and team characteristics are common in medicine, but may come under stress, or even be absent, during a crisis.

To build a cooperative conspiracy, we can lean on Benkler's advice. First, we must acknowledge the hypercompetitive problem in our midst and when altruism is not authentic. Second, not all doves are white. Diversity in race, ethnicity, and gender is urgently needed for leadership, design, and reporting of COVID studies. Recent work shows significant gender imbalance in COVID research authorship [8]. Third, the incentives in academic medicine are misaligned during a pandemic. Gains in prestige, employment, and a winner-take-all mentality are primed to overwhelm our desire to help. Ioannidis described how these incentives may lead to an "epidemic of false claims" in biomedical research [9], now on full display in recent COVID observational studies [10]. A re-design of incentives that fosters creativity and collaboration are needed so that we race the virus not each other. These might include simultaneous reporting, new strategies for credit allocation, and open communication across groups and funders [11]. Finally, selfishness must be deterred in favor of empathy. As Darwin wrote, "Selfish and contentious people will not cohere, and without coherence nothing can be effected." [12] Empathy can be quickly lost when patients become subjects in a database, but it can motivate altruistic choices even among the most selfish [13].

It is now months after the conference call. I hope my own conviction, accompanied by shame, and then understanding, is an example. The shadow of future pandemics is long, and our success in collaboration, not academic competition, may very well keep the hawks at bay.

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